"Francis, Robert M." <robert.francis@thermofisher.com>
10/22/2008 09:09 AM

To "Stratton, Alan D" <adstra@solutia.com>, Matthew Schneider/NEIC/USEPA/US@EPA
cc "Matta, Alan R." <alan.matta@thermo.com>, "Jones, Dale P." <dale.p.jones@thermo.com>, "Robert, Craig" <craig.robert@thermo.com>, "Pepe, Peter"
bcc
Subject Formaldehyde Results

History: This message has been replied to and forwarded.

1 attachment

Formaldehyde08.pdf

Sent on behalf of Alan Matta, RF attachment included

Good day Matt and Alan,

I am responding to your inquiries of much earlier this year. I do apologize for this delay and take full responsibility for the delay...I offer no excuses, but rather a sincere apology for the lack of response. Attached is a revised response factor sheet for formaldehyde on the TVA1000B

When the inquiry first came in we reviewed the initial response factor calculated in the 1997 time frame. At that time, formaldehyde vapors were created using solid formaldehyde heated in a water bath. Our assumption was that the calculation of the actual concentration was not properly performed, resulting in an inability to maintain stable formaldehyde concentrations used to develop the response factor.

We validated this by obtaining a certified cylinder of formaldehyde at a concentration of 50 PPM. Our Application Laboratory confirmed this concentration using an infrared instrument and then attempted to duplicate the effort from 1997 using a water bath. We confirmed that the concentration was not fully stable using the water bath method and the result differed significantly from those expected.

We first introduced formaldehyde from the certified cylinder at concentrations of 10 and 50 PPM and recorded the infrared absorbance data for the two concentrations. We then used the water bath to generate formaldehyde samples and ran these through the infrared instrument to obtain comparable absorbance data at 10 and 50 PPM. After stabilizing the water bath to control the absorbance values, we introduced the formaldehyde at generated concentrations of 10 and 50 PPM through the infrared unit directly into the TVA. We ran normal response factor calculations for these two concentrations on the calibrated TVA.

We also attempted a concentration at 100 PPM (could not truly validate accuracy as the cylinder had a maximum concentration of 50 PPM). We generated the attached response factor and submit it to you for your review. Our intent would be to modify the response factor booklet to include this new data.

Thank you for your patience on this issue. Please contact me by any of the methods noted below. I am currently attending the Aerosol Conference (AAAR) and will return to the office on Friday. Thank you.

Best regards,

Alan Matta
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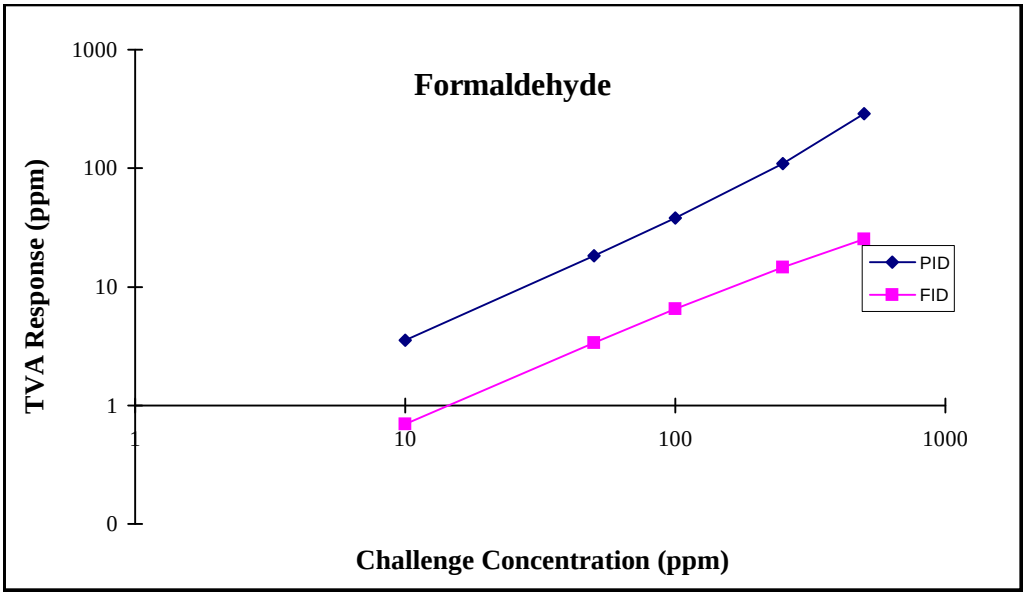
THERMO TVA-1000 RESPONSE CURVES
Formaldehyde

Challenge Concentration (ppm)	Thermo/TVA-1000A (or equivalent) Response Factor Multiplier		EPA/TVA-1000B (or equivalent) Response Factor Multiplier	
	PID	FID	PID	FID
10	NA	NA	2.838	14.381
50			2.747	14.827
100			2.633	15.385
250				
500				
1000				
2000				
5000				
7500				
10000				



PID Lamp (eV): 11.8

TVA-1000B Response Curve Coefficients:		A	B
	PID	2.86	22.77
	FID	14.27	-111.55

*See the introduction of this manual for the definition of the TVA-1000 Analyzers and their equivalents.

10/08